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ABSTRACT

Middle Tennessee State University (MTSU) began offering courses by Desktop Videoconferencing (DVC) in fall 1995 and continues to experiment with ways to use this new and flexible teaching tool. This paper describes the MTSU DVC system in an attempt to expose educators to this new technology and its many possibilities, and to stimulate discussion and the exchange of information on DVC as a teaching tool. The possibilities are not yet fully explored for its potential in individual as well as group instruction, for synchronous and asynchronous contact, and for its incorporation with other technologies; however, it seems to offer convenience and all the benefits of a classroom experience. (Author/SWC)

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TITLE: Teaching From the Desktop

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ABSTRACT:

MTSU began offering courses by desktop videoconference (DVC) in Fall 1995 and continues to experiment with ways to use this very new and flexible teaching tool. The goal of this demonstration is to expose educators to this new technology and its many possibilities, and to stimulate discussion and the exchange of information on desktop videoconferencing as a teaching tool. The possibilities are not yet explored for its potential in individual as well as group instruction, for synchronous and asynchronous contact, and for its incorporation with other technologies to provide an environment for distance students that is not only convenient, but that holds all the benefits of a classroom experience.

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Teaching From the Desktop

You are sitting in your office at your computer writing a paper when, bip-bip, bip-bip, your organizer alerts you that it is time for your ten o'clock class. The pattering on the pane of your postage-stamp window tells you that its raining buckets. And you forgot your umbrella this morning. But you don't need an umbrella. You don't even need to get up. You simply save the paper you are working on, aim your mouse at an icon, and click. The screen looks like a telephone handset. You select a name from the dial list, click on "dial." It rings and there, if she hasn't decided to cut class today, is your student. After exchanging greetings you launch the application you will both be working in today and class begins. This is not the future. This is desktop video conferencing at MTSU today.

Desktop video conferencing (DVC) is teleconferencing over a desktop computer. A DVC system consists of a video camera, a video board, software, a headset with speaker and microphone, and either network or ISDN interface[1] installed on a high-speed computer, with 16 MB of RAM, a VGA or multi-media monitor, and Windows 3.1 or better. There are about 60 DVC systems on the market today[2] which range in price from around $2;000 to around $6,000 not including the cost of the computer.[3] Substantial educational discounts are available for some systems.

MTSU began using DVC for individualized instruction in the Fall semester of 1995. Watson Hannah taught Accounting 300 to two students located about twenty miles from MTSU's campus. Each student met at regularly scheduled times on a DVC system in a classroom at the Nissan Training Center. Ms. Hannah instructed from a DVC system in her office on MTSU's campus. The teacher and student called one another on their computers over ISDN telephone lines.[4]

MTSU chose Intel's ProShare Personal Conferencing Video System to begin its experiment into "Teaching from the Desktop" because of the flexibility the product offers through document and application sharing. The integration of data sharing and collaboration tools with video conferencing was the trick that finally made DVC attractive to education. Without data sharing the DVC is little more than a videophone. Although it is possible to deliver a course entirely over a videophone, just as it is possible to deliver a course over a telephone, interaction between student and teacher would be limited and the sharing of information would be difficult. New DVC systems increase interactivity with a broad range of collaboration tools. Teaching with these tools is like teaching in a mini-multi-media classroom.

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[1] DVCs on networks can only call other DVCs on that network. Those with ISDN connectivity can call any other video conferencing system that is also connected to ISDN lines.

[2] p. 114. "Teleconferencing Directory Issue" Teleconference: The Business Communications Magazine, Vol 14, No. 4, 1995.

[3] p. 60. "Desktop Videoconferencing Challenge." Newmedia. Nov. 1995.

[4] Integrated Services Digital Network (ISDN) is a set of standards that allows video, voice, and data to be transmitted over specially configured telephone lines.

On the white board a teacher can type out ideas, outline the course work, show pictures, graphs, etc. to illustrate a point. The teacher can then ask for input from the students who can add notes and make changes on the white board with highlighter, pen, circle or other annotation tools. Students and teachers can assume different colors to distinguish their notes, but the teacher always has control. The teacher can choose either to share the board with the student or to lock the student out. Teachers and students also have private workspaces for note taking which only they can see.

With document sharing the teacher can present information to students on screen. No need for handouts. If necessary the student can print out the information or save it to a disk. Students can present their assignments to the teacher on screen. The teacher can make corrections with any of the annotation tools.

Through application sharing the teacher can present a document and change it in its original application. The changes can then be saved to the original application. Any Windows-based application, e.g., spread sheet such as Lotus, Excel, QuatroPro; word processor such as Word or Word Perfect; data base such as dBase, or Access; desk-top publishing such as PageMaker or Publisher; even presentation applications such as Astound or PowerPoint can be shared. The teacher can share the application with students even if students' PCs do not have that application

Some of the advantages to teaching from the desktop are obvious. The student can finish a shift at work and go directly to class without going home or driving several miles. The student can not only see and hear the instructor but can interact with her on screen in real time. The instructor can teach from her office having, literally at her fingers, all of the resources she needs.

The purpose of this year's experiment was to determine what the disadvantages might be. One expected disadvantage turned out not to be a problem at all. We expected students and teacher to have some initial difficulty learning to use the DVC system. The two students in this experimental class used computers in their work and so found the ProShare system very easy to learn. Likewise, the teacher was already a skilled computer user and had little trouble learning to the wide range of collaboration techniques available to her.

There were some technical problems in the beginning largely due to miscommunication and the inexperience of technical personnel with this very new system. By the end of the semester, although technical problems were not totally eliminated, they were dealt with more efficiently. Locating the right person to handle the problems and a spirit of cooperation were both important in working out these problems.

Technology can cause a lot of changes, but it will never change human nature. Students still tend to cut class from time to time and when there is only one student, class cannot continue. This put the course behind schedule. The instructor imposed penalties to limit missed classes.

Despite all the tools available on ProShare they are sometimes not enough. Although the accounting class did not lack any tools, another teacher interested in offering an electrical engineering course found that he could not express the necessary equations with the available tools and that the handwriting tablet available to ProShare was too small to use comfortably. We are searching for a larger electronic tablet.

The most significant limitation to this system is its inability to teach more than one student at a time. This is too inefficient to be useful except on an experimental or an emergency basis. In 1996 MTSU plans to initiate group participation in desktop video conferencing. Classrooms of DVC equipped computers at remote sites perhaps at another college, a high school, or a business will be networked. Another networked DVC classroom will be located on campus. The instructor will be able to teach multiple remote networks from the on-campus classroom in much the same way that compressed video classes are taught.

This DVC classroom will supplement MTSU's existing compressed video distance learning classrooms. Compressed video will continue to be used at sites that enroll large classes of students. DVC classrooms will be designed to serve areas that consistently have low enrollment. Equipping low enrollment sites with individual DVC systems will be considerably less expensive than equipping those sites with room sized teleconferencing systems.

A new product called The Presenter, released by Intel in January, 1996, may make this possible. With this product a teacher can send video, audio and data to unlimited numbers of students. Students can respond to the teacher either by voice or keyboard. Each student can choose to interact privately with the teacher or with the entire class. If The Presenter will make video conferencing affordable for small groups of scattered students it may be the tool that MTSU needs to reach more students at a distance.

Other possibilities for using desktop video conferencings in asynchronous contact and for its incorporation with other technologies remain to be explored. MTSU will continue to lead the search for technology that will offer more students a learning experience that is not only convenient, but that holds all the benefits of a classroom experience.

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